

CLAIMS

What is claimed is:

1. A method of calculating Thevenin parameters  
5 comprising the steps of:

(a) initializing estimates of effective capacitances  
 $C_{eff1}$  and  $C_{eff2}$ , of a switching threshold delay  $t_0$ , and of  
a slope delay  $deltat$ ; and

(b) solving ramp response equations for  $t_0$  and  $deltat$   
10 as a function of  $C_{eff1}$  and  $C_{eff2}$ .

2. The method of Claim 1 further comprising the  
step of (c) comparing the estimates of  $t_0$  and  $deltat$  with  
solutions for  $t_0$  and  $deltat$  found in step (b).  
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3. The method of Claim 2 further comprising the  
step of (d) replacing the estimates of  $t_0$  and  $deltat$  with  
the solutions for  $t_0$  and  $deltat$  if the solutions for  $t_0$   
and  $deltat$  have not converged to the estimates of  $t_0$  and  
20  $deltat$ .

4. The method of Claim 3 further comprising the  
step of (e) repeating steps (b), (c), and (d) until the  
solutions for  $t_0$  and  $deltat$  converge to the estimates of  
25  $t_0$  and  $deltat$ .

5. The method of Claim 3 further comprising the  
step of (f) calculating a  $delay1$  as a function of  
 $t_{30}(C_{eff1})$  or  $t_{70}(C_{eff1})$  and a  $delay2$  as a function of  
30  $t_{50}(C_{eff2})$  from a Foster or a pi model.

6. The method of Claim 5 further comprising the step of (g) comparing *delay1* and *delay2* to delays *delay1'* and *delay2'* corresponding to *Ceff1* and *Ceff2* in a delay lookup table.

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7. The method of Claim 6 further comprising the step of (h) finding new values for *Ceff1* and *Ceff2* from a reverse lookup of *delay1* and *delay2* in the delay lookup table if *delay1* and *delay2* have not converged to *delay1'* and *delay2'*.

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8. The method of Claim 7 further comprising the step of (i) replacing the estimates of *Ceff1* and *Ceff2* in step (b) with the new values for *Ceff1* and *Ceff2*.

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9. The method of Claim 8 further comprising the step of (j) repeating steps (b) through (i) until *delay1* and *delay2* converge to *delay1'* and *delay2'*.

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10. A computer program product comprising:  
a medium for embodying a computer program for input to a computer; and  
a computer program embodied in the medium for causing the computer to perform at least one of the following  
functions:

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(a) initializing estimates of effective capacitances *Ceff1* and *Ceff2*, of a switching threshold delay *t0*, and of a slope delay *deltat*;

(b) solving ramp response equations for *t0* and  
*deltat* as a function of *Ceff1* and *Ceff2*;

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(c) comparing the estimates of  $t_0$  and  $deltat$  with solutions for  $t_0$  and  $deltat$  found in step (b);

(d) replacing the estimates of  $t_0$  and  $deltat$  with the solutions for  $t_0$  and  $deltat$  if the solutions for  
5  $t_0$  and  $deltat$  have not converged to the estimates of  $t_0$  and  $deltat$ ;

(e) repeating steps (b), (c), and (d) until the solutions for  $t_0$  and  $deltat$  converge to the estimates of  $t_0$  and  $deltat$ ;

10 (f) calculating a  $delay1$  as a function of  $t_{30}(Ceff1)$  or  $t_{70}(Ceff1)$  and a  $delay2$  as a function of  $t_{50}(Ceff2)$  from a Foster or a pi model;

(g) comparing  $delay1$  and  $delay2$  to delays  $delay1'$  and  $delay2'$  corresponding to  $Ceff1$  and  $Ceff2$  in a  
15 delay lookup table;

(h) finding new values for  $Ceff1$  and  $Ceff2$  from a reverse lookup of  $delay1$  and  $delay2$  in the delay lookup table if  $delay1$  and  $delay2$  have not converged to  $delay1'$  and  $delay2'$ ;

20 (i) replacing the estimates of  $Ceff1$  and  $Ceff2$  in step (b) with the new values for  $Ceff1$  and  $Ceff2$ ; and

(j) repeating steps (b) through (i) until  $delay1$  and  $delay2$  converge to  $delay1'$  and  $delay2'$ .